


PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

12

Applicant's or agent's file reference WO 24421	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/EP99/06827	International filing date (day/month/year) 15/09/1999	Priority date (day/month/year)
International Patent Classification (IPC) or national classification and IPC H04M3/54		
Applicant NOKIA NETWORKS OY et al.		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 4 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 1 sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none">I <input checked="" type="checkbox"/> Basis of the reportII <input type="checkbox"/> PriorityIII <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicabilityIV <input type="checkbox"/> Lack of unity of inventionV <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statementVI <input type="checkbox"/> Certain documents citedVII <input type="checkbox"/> Certain defects in the international applicationVIII <input type="checkbox"/> Certain observations on the international application		
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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP99/06827

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):
Description, pages:

1-23 as originally filed

Claims, No.:

1-24,26,27 as originally filed

25 as received on 15/11/2001 with letter of 15/11/2001

Drawings, sheets:

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

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**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP99/06827

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	1-27
	No:	Claims	
Inventive step (IS)	Yes:	Claims	1-27
	No:	Claims	
Industrial applicability (IA)	Yes:	Claims	1-27
	No:	Claims	

- 2. Citations and explanations**
see separate sheet

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**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP99/06827

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement

The invention relates to a method of notifying a call forwarding party about a forwarded call (independent claim 1) and to a corresponding communication network (independent claim 20) and terminal (independent claim 25).

US-A-4476349 cited in the international search report and acknowledged in the description relates to a call message service which generates and stores a callback message for a called terminal. This message is able to notice the identity of the calling terminal and the identity of the destination of the forwarding.

Drawback of this prior art is that the information about the forwarded calls provided by this service must be retrieved by dialling a feature code from a phone.

The present invention provides a method of notifying a call forwarding party about a forwarded call which is free from this drawback.

According to the features of the independent claims a notification comprising a content about a forwarded call is sent to the terminal of the forwarding party.

None of the available prior art documents discloses or renders obvious the combination of features of the independent claims. Claims 1, 20 and 25 thus fulfil the requirements of Article 33(2) and 33(3) PCT regarding novelty and inventive step.

The remaining claims are dependent on claims 1, 20 or 25 and therefore also fulfil the requirements of Article 33(2) and (3) PCT.

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Enclosure of November 15, 2001

PCT Patent Application No.: PCT/EP 99/06827
NOKIA NETWORKS OY
Our ref.: WO 24421

New claim 25

25. A terminal for forwarding a call, said terminal (T22) comprising

means adapted for setting a call forwarding service device (CFS) of a communication network to which network said terminal (T22) subscribes;

means adapted for receiving a notification from said call forwarding service device (CFS) about a forwarded call which was directed to and forwarded by said terminal according to the setting of said corresponding means; and

means adapted for displaying a content of said notification.

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80298 München

November 15, 2001

PCT Patent Application No.: PCT/EP 99/06827

NOKIA NETWORKS OY

Our ref.: WO 24421

(F23.11.01 Eing.)

Reference is made to the Written Opinion dated August 23, 2001.

Enclosed herewith, a new claim 25 replacing the originally filed claim 25 is filed upon which, in combination with the remaining documents as on file, the further prosecution of the present case is to be based.

The amendments as effected to this new claim 25 are as is apparent from the claim amendment sheet which is enclosed herewith in addition.

In the matter, the following is submitted.

Reference D1 discloses terminals for private automatic branch exchange (PABX) networks. Apparently, the terminals are able to handle call forwarding (see, for example, p. 21, left col., third paragraph, "... such as when call forwarding is active ..."). Implicitly, also the setting of a respective call forwarding service device of this PABX communication network may thus be considered to be disclosed. Further, the same text passage also discloses the presence

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of means for displaying messages ("If the terminal has a display, these messages can be shown ..."). Moreover, a "separate message path" (also from the above cited text passage) is provided by the use of which the identity of an extension diverting an incoming call can be shown on the display (see, for example, the paragraph bridging pages 23 and 24 of reference D1). Hence, also the feature of a notification receiving means according to originally filed claim 25 would be shown by reference D1.

In contrast, it is not shown by the disclosure of reference D1 that the forwarding terminal receives a notification about a call which said terminal has forwarded (or is forwarding).

Since this feature is henceforth defined in claim 25, the subject matter thus defined is new over the disclosure of reference D1.

However, it is held that it is also based on an inventive step.

According to the aforesaid, the teaching of reference D1 is directed to features which are effective in terminals between which a call is actually established and in progress, respectively. That is, no mention is made to features of a terminal which does not really take part in a call, but rather is only the origin of the setting of a forwarding status. Particularly, it is only taught that a terminal is notified to which a call is actually established, maybe as a result of a forwarding, but it is nowhere shown or suggested that a terminal is notified which is the origin of a forwarding.

Bearing in mind that such a notification of the forwarding terminal as defined by the present invention provides the

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possibility of an accurate setting of forwarding details, it is apparent that this advantage can not be made available from the teaching of reference D1 without involving inventive skills.

At this point, it is mentioned in addition that the additional feature of claim 26 is also neither shown nor suggested by the teaching of reference D1. The reason follows directly from the above, since the additional feature of claim 26 utilizes said above mentioned notification.

Having regard to the teaching of reference D2, there is disclosed that information about a call is transmitted by a network device ("switch") to a called terminal (see, for example, page 3, left col., the last as well as the bridging paragraph: "*The information ... is passed to the called station.*"). This terminal may initiate a call forwarding based on this and other information (same text passage: "*The called station, based on ... decides to ... divert the call ...*"). This passage however merely describes the setting of a call forwarding, whereas when the call forwarding is already established and in progress, respectively, then reference D2 teaches that a message is sent to the new terminal to which the call has been forwarded to (see page 3, right col., second paragraph: "*The switch will then pass the ... message to the new specified number*"). Thus, the teaching of reference D2 in this particular point is similar to that of reference D1 for which reason substantially the same arguments apply.

That is, reference D2 provides no hint or suggestions which, either when taken or alone or in combination with the teaching of reference D1, would render obvious the subject matter of the new claim 25.

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This judgement is also true for reference D3. As is apparent from the abstract, reference D3 describes an "incoming call transfer terminal" which receives a call-setting message destined to a third party and generates a new call-setting message destined to said third party. The purpose of this new call-setting message is to inform the third party about the calling party's subscriber number (calling number).

However, also in this case it is not shown or suggested that a forwarding terminal receives a message when the call forwarding is already established and in progress, respectively.

Therefore, in summary, the subject matter as defined by the new claim 25 involves an inventive step in consideration of references D1-D3.

Thus, it is respectfully requested to indicate the same.

Specifically, it is respectfully requested to state that the issues underlying the preliminary opinion are to be considered positive.

If this cannot be held, a personal consultation is considered to be helpful.

Thomas J.A. Leson
Patentanwalt
TBK-Patent

Encl.:

- New claim 25
- Claim amendment sheet

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Enclosure of November 15, 2001

PCT Patent Application No.: PCT/EP 99/06827
NOKIA NETWORKS OY
Our ref.: WO 24421

New claim 25

25. A terminal for forwarding a call, said terminal **(T22)** comprising

means adapted for setting a call forwarding service device **(CFS)** of a communication network to which network said terminal **(T22)** subscribes;

means adapted for receiving a notification from said call forwarding service device **(CFS)** about a forwarded call which was directed to and forwarded by said terminal according to the setting of said corresponding means; and

means adapted for displaying a content of said notification.

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Claim amendment sheet

(Amendments are emphasized)

25. A terminal for [...] forwarding a call, said terminal
(T22) comprising

means adapted for setting a call forwarding service
device (CFS) of a communication network to which network
said terminal (T22) subscribes;

means adapted for receiving a notification from said
call forwarding service device (CFS) about a forwarded call
which was directed to and forwarded by said terminal
according to the setting of said corresponding means; and

means adapted for displaying a content of said
notification.

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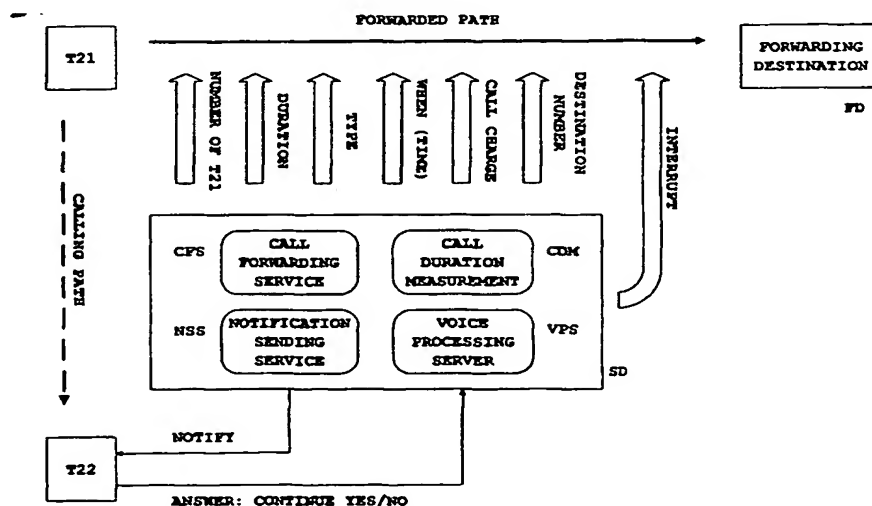
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- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: **METHOD OF NOTIFYING A CALL FORWARDING PARTY**



(57) Abstract: The present invention provides a method of notifying a call forwarding party about a forwarded call, said method comprising the steps of forwarding a call (S11) from a calling party (T21) to a destination (FD) defined by said call forwarding party (T22); establishing a content (S12) of a notification about said forwarded call; and sending said notification (S13) by a service (NSS) of a communication network to a terminal (T22) of said call forwarding party, wherein said notification comprises said content.

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METHOD OF NOTIFYING A CALL FORWARDING PARTY

Field of the Invention

5 The present invention relates to a method of notifying a call forwarding party about a forwarded call. Particularly, the present invention relates to a method of limiting a duration of a forwarded call.

10 Furthermore, the present invention relates to a communication network and a terminal being capable for that purpose.

Related Background Art

15 Recently, a major benefit connected with the use of mobile terminals like mobile phones or the like is the increased flexibility the user gains. Accordingly, providing a service for forwarding incoming calls which
20 cannot be accepted was a logical consequence.

For a further convenience of this service, the user has to be notified in one way or the other that a forwarding took place. Basically, such a notification is known from
25 the blue book specification Q.730 of the International Telegraph and Telephone Consultative Committee (CCITT). This specification, however, teaches nothing about the contents or the implementation of such a notification.

30 From document US-A-4 476 349 there is known a call message service which generates and stores a callback message for a called terminal. This message is able to notice the identity of the calling terminal and the identity of the destination of the forwarding.
35 Additionally, the forwarded times are stored, i.e. it is

noticed when the forwarded calls took place. However, the subject matter of document US-A-4 476 349 is directed to a service in private branch exchanges (PBX) and the information about the forwarded calls provided by this
5 service must be retrieved by dialing a feature code from a phone.

Summary of the Invention

10 Accordingly, it is an object of the present invention to provide a method of notifying a call forwarding party about a forwarded call which is free from the above drawbacks.

15 In particular, the present invention aims to provide a respective method which is applicable to modern extended communication networks. Consequently, the present invention proposes a communication network and a terminal for that purpose.

20

According to the present invention, this object can be solved by a method of notifying a call forwarding party about a forwarded call, wherein said method comprises the following steps: Firstly, a call from a calling party is
25 forwarded to a destination defined by a call forwarding party; then, a content of a notification about said forwarded call is established; finally, said notification is sent by a service of a communication network to a terminal of said call forwarding party, wherein said
30 notification comprises said content.

The defining of the destination by the call forwarding party may be an indirect process, for example, a set of possible forwardings to different numbers may have been
35 specified by the call forwarding party. However, a

forwarding service may determine the number, which can be based on several criteria.

The content of the notification can comprise information about a calling party number, a call duration, a type of forwarding, a time of forwarding, a call charge and a number to which said call has been forwarded. According to the present invention, it is at least one of those, but a maximum of information included in the notification increases the benefit of the present invention. Moreover, if the information comprised by said content of said notification corresponds to data which is processable by said terminal of said call forwarding party, which can be the case according to the present invention, there can even more comfortable advantages be achieved.

One thereof can be that it is possible to predefine a break-off condition for said forwarded call by a user of said terminal, and that said notification is sent when said break-off condition is fulfilled, after which said user of said terminal is prompted to accept or refuse a continuation of said forwarded call. Having processable data in the notification, the aforementioned could be easily obtained while without processable data an implementation would be rather difficult but still conceivable. The expression "processable" in this connection is to be understood such that data corresponding to the information included in the notification comes along in a format which allows a direct processing by the respective terminal. That is, for example, that different content of the notification can be easily distinguished, and so on.

Clear examples for such a break-off condition are a maximal call charge or a maximal call duration, because

if the call forwarding party pays for the forwarding leg, she or he may be very interested to limit such calls but have the possibility to decide from case to case whether the forwarding call can continue. Accordingly, this
5 break-off condition can depend on the calling party number, including the possibility that no break-off condition exists for some certain calling party numbers.

Although it is clear that an input to said terminal in
10 reaction to said prompting can be manually performed by the user of said terminal and said forwarded call would be cleared if there is no input within a specified time, it might be rather more important that a reaction of said terminal to said prompting is automatically performed
15 according to a presetting of said terminal, which presetting would be input by said user. The automated case is advantageously supported if processable data is present in the aforesaid sense.

20 According to the present invention, the object can further be achieved by a communication network comprising a call forwarding service device which is able to determine a calling party number; a device for measuring a call duration of a forwarding call; and a service
25 device for sending a notification to a terminal of a call forwarding party, thus having the substantial elements for carrying out some aspects of the present invention.

However, it is also desirable that the call forwarding
30 service device is also able to determine a type of forwarding, a time of forwarding, a call charge and a number to which said call has been forwarded.

With respect to an implementation of the functionalities
35 of a call forwarding service device, a measuring device,

a notification sending service device and other devices advantageous for carrying out the invention, it is of course conceivable that at least some of them are implemented into one single device, or on the other hand, 5 that a single functionality is distributed over several devices.

Furthermore, according to the present invention, there is provided a terminal for a handling of call forwarding, 10 wherein said terminal comprises means adapted for setting a call forwarding service device of a communication network to which network said terminal subscribes; means adapted for receiving a notification about a forwarded call; and means adapted for displaying a content of said 15 notification. According to the aforesaid it is advantageous if the terminal further comprises means for processing data corresponding to information comprised by said content of said notification, and another advantageous modification of the terminal is if it 20 further comprises means for automatically performing a reaction to a prompting of a user of said terminal by a service of said communication network for sending said notification, which automatic performance is preset by said user.

25

It is to be noted that, throughout the present specification, CAMEL and IN designates any solution in which a call, connection or session processing node contacts a service control function which issues 30 instructions to the respective node. The contact to the service control function is based on a trigger information stored in the respective nodes. The trigger information may specify situations in the course of a call, connection or session handling. The service control 35 function may be internally distributed. Moreover, the

corresponding IN protocol could be any protocol between a controlling entity, such as a service controller (e.g. CAMEL Service Environment, CSE), responsive to a triggering from a call, and a session or connection processing node. The IN protocol may be e.g. an object oriented interface where the operations are object methods or invocations.

It is to be noted further that throughout the present specification, WAP and WTA designate any solution in which there is a content execution environment (user agent) at the terminal side and this environment is capable of controlling terminal (MS) functionalities such as call control, mobility management MM and user interface. Furthermore, the execution environment may receive content from the network spontaneously or it may be provided with references to content to be downloaded. The content may be hypertext, markup language code, any interpreted or even native or virtual machine code.

20

Further advantages of the present invention will become apparent from the description of the preferred embodiments of the present invention, which will be described herein below by way of example with reference to the accompanying drawings.

25

Brief Description of the Drawings

Fig. 1 shows a flow chart representing an extended embodiment of the present invention.

30

Fig. 2 shows a schematic view of the elements of a communication network and their interaction as is presented by this invention.

35

Fig. 3 shows a signaling sequence between certain devices of a communication network according to a further embodiment of the present invention.

- 5 Fig. 4 shows a signaling sequence between certain devices of a communication network according to a still further embodiment of the present invention.

Description of the Preferred Embodiments

10

Referring now to Fig. 1, there is shown a flow-chart of a method of notifying a call forwarding party about a forwarded call, wherein the most common cases of the invention presently conceivable are depicted for an
15 overview in toto.

- As can be gathered from Fig. 1, the starting condition for the depicted procedure is that a call is forwarded. This may usually be the case if a terminal of a user
20 which is called is presently closed or has lost contact with a respective communication network. More complicated circumstances for an activation of a call forwarding are of course conceivable. However, the present invention is in any case not limited to the reason for call
25 forwarding.

- In a following step S10, the procedure distinguishes between the cases if simply a notification about a forwarded call is sent to the call forwarding party, or
30 if network, terminal, and user, respectively, shall interact with the call forwarding process. Namely, the point is whether a break-off condition for the call forwarding is present or not.

Consequently, if there is no break-off condition, the call will be forwarded in its full length corresponding to step S11 of Fig. 1. According to the present forwarding services and those to come, there might be a lot of parameters in which call forwardings might differ from each other. These parameters, however, can be of particular interest to the call forwarding party, i.e. a user of a terminal which has been called. Of course, the identity of the calling party (its number) and the time when the calling and in consequence the forwarding took place obviously are of interest to the called party. Moreover, if the forwarding service of the respective communication network allows to activate different forwarding designations, e.g. depending on the calling number or the like, this would of course also be of interest to know. Further examples for such parameters are the type of forwarding, the duration of the forwarded call and the charge of the forwarded call, wherein still further examples are conceivable.

20

As is apparent from these above examples for such parameters, either they are immediately clear in the moment when the forwarded path is established, or they develop with the forwarded call thus being fixed with the end of the call. Since the present invention aims to notify a call forwarding party about a forwarded call, the content of this notification should be established in close connection to the performance of the call forwarding. When the step S12 of establishing the content of the notification is finished, which may typically be with the end of the forwarded call, the notification can be sent to the call forwarding party in a step S13. In conclusion, a process for notifying a call forwarding party about a forwarded call is completed therewith. In any case, it is to be noted that the present invention is

35

not limited to such a close connection of the content establishment to the end of the forwarded call.

However, since it might be usual that the call forwarding party pays for the forwarding leg, it is clear that there might be the wish to limit the duration of a forwarded call. By the same token, the charge for the forwarded call can be dependent from other factors, thus, if all those factors are known, the forwarding party might wish to expressly have an upper charge limit for one forwarded call.

In this case, a break-off condition for the forwarded call will indeed be present in step S10 of the present procedure. According to the present invention, this break-off condition is of course not limited to the two aforesaid examples but can rather be chosen among all of those mentioned above as parameters of a forwarded call and others conceivable.

Anyway, if there is a break-off condition present in step S10, the call will be forwarded in a step S11' until this break-off condition is met. For an establishment of a content of a respective notification about the forwarded call in a step S12' the same is valid as was mentioned above in connection with the step S12.

The notification to be sent in a step S13' will now contain a hint that a forwarded call was interrupted due to the meeting of a break-off condition, and thus, the user of a terminal where the notification will be received and displayed, respectively, is prompted in a step S14 to accept the continuation of the forwarded call or not. If the call is related to an important business or private relationship, it seems to be appropriate to

accept, otherwise maybe not. However, the possibility to limit the amount of costs for call forwarding charges while having the opportunity to individually extent a call duration in a forwarding connection is a very comfortable and flexible feature of the present invention.

In any case, the refusal of the continuation of the forwarded call will lead to a clearing of this call while the acceptance would result in the forwarded calls continuation until its end. Since the reason for activating a forwarding service could in many cases be the fact that a terminal is closed or for other reasons physically not reachable, or simply for the sake of convenience, an automated decision according to step S15 would be even more comfortable. Such an automated decision can have more or less conditions in which cases a forwarded call is allowed to continue despite of a met break-off condition, e.g. certain calling party numbers are allowed to continue "eternally" thus resulting in that there is no break-off condition present for them at all. A more complicated structure of such an automated process is according to the present invention conceivable and its possibility intended. Anyway, such an automated process will most likely be based on the calling numbers.

In contrast thereto, deciding by a manual input to the terminal, to which the notification is sent, over the continuation of a forwarded call might in some cases be more appropriate. However, this case is also included in the present invention, but brings along the theoretical drawback that the network waits for this input of the user. Hence, to solve this problem, a timer can be activated after the expiry of which the forwarded call is cleared.

In any case, if the result of step S15 is that the forwarded call shall continue, there is a step S11'' in which the forwarding of the call until its end is performed. Optionally, also then a notification can be sent to the user in a step S13'' about all or exclusively the unknown parameters of this "second part" of the forwarded call. Consequently, in that case a step S12'' of establishing a content of the notification would exist which corresponds to the aforesaid about such content establishment.

Referring now to Fig. 2, there are shown the elements of a communication network being capable to adopt the present invention.

As can be gathered from Fig. 2, there is a terminal T21 calling a terminal T22. This terminal T22, however, has one or more forwarding conditions set which are now fulfilled. Accordingly, the call is forwarded by a call forwarding service device CFS to a forwarding destination FD. To this call forwarding service device, many of the aforementioned parameters of call forwarding might be apparent, as the number of the calling terminal T21, the type of call forwarding, the time of call forwarding, the call charge, and the destination number. By determining these parameters, a lot of the content of the notification according to the present invention can be established. However, for those parameters which perhaps are not apparent to this call forwarding service device, according to the present invention there is a device for that purpose provided, for example a call duration measurement device CDM for measuring the call duration.

Having the content of the notification established, the notification is sent to the terminal T22 by a notification sending service device NSS for displaying the information about the forwarded call. It is to be
5 noted that according to the present invention it is not necessary that the notification is sent to the originally called terminal, but can be sent to any terminal of the called user which terminal can be predetermined.

10 If a break-off condition is provided according to the aforesaid, the user of the terminal T22 will manually or automatically send an answer to the call forwarding service device whether a forwarded call might continue or not. However, at the very moment when the break-off
15 condition is met, the call forwarding service device CFS interrupts the forwarded call. Then, either the call forwarding service device CFS waits for a specified time period whether an answer arrives from the terminal, or in case of an automated process or when said answer arrives,
20 the call forwarding service device CFS immediately acts in correspondence with the automated or manual input answer. Accordingly, if the specified time period has expired or the answer was "no", the forwarded call according to the forwarding path is cleared, and if the
25 answer was "yes", the call forwarding continues.

Although there are several devices mentioned here for carrying out the invention, it is expressly mentioned that the number of devices is irrelevant for that
30 purpose, for example, all functionalities necessary for providing a communication network according to the present invention can be included in a single device SD. On the other hand, according to the present invention it is not necessary that a functionality is implemented
35 alone or with other functionalities in one device, that

is, each of the aforesaid functionalities can be distributed over several devices which, together, form sort of a logical device for carrying out the respective imparted functionality. For example, the call forwarding device and its functionality, respectively, can be distributed over communication network entities such as a mobile services switching center (MSC), a CAMEL (Customized Application for Mobile network Enhanced Logic) service environment (CSE) and a Wireless Telephony Applications server or just over a mobile services switching center (MSC) and a short message service center (SMSC) and so on.

The present invention can be very beneficial implemented by the use of the so-called intelligent network (IN). Therein, the forwarded call can be triggered from the forwarding gateway mobile services switching center (GMSC) or from the forwarding home location register to the Customized Applications for Mobile network Enhanced Logic (CAMEL) Service Environment (CSE) service logic, which requests the sending of the notification.

Furthermore, also the Wireless Application Protocol (WAP) with its Wireless Telephony Application (WTA) can be beneficially used for implementing the present invention. In this case, the notification can provide the numbers or the forwarding indication to a respective terminal and the user can retrieve the numbers by using a WAP application.

One embodiment of the type of the notification would be a message of the short message service (SMS). Similarly, also a packet data bearer may be used for the sending of the notification.

In case of an implementation among the intelligent network, the sending of the SMS is done by a service control point (SCP), so that the forwarding leg of the call triggers to this SCP.

5

Another embodiment of the type of the notification can be a terminal terminated unstructured supplementary service data (USSD) which may also request a response from the user, while still another embodiment is that there is a voice processing server VPS, as shown in Fig. 2, which provides the respective information. Such a voice notification can be accompanied by processable data for the purpose as explained above.

10

As regards the case of limiting the forwarded call duration there is also a beneficial use of WTA possible. The separate specification WTA brought along with WAP enables WAP to interwork with voice services. The WTA provides several means therefor.

20

Accordingly, WTA comprises service indications that enable a WTA server to instruct the user agent (i.e. browser) to download and execute the WAP content from a uniform-resource locator (URL) given in the service indication. The WAP content addressed in the URL can also be downloaded to a user agent repository inside the terminal beforehand.

25

The WTA comprises also a WTAI (Wireless Telephony Applications Interface) which is an application programmable interface (API) that enables WAP content to invoke functions in the mobile station, e.g. make calls, answer calls, send SMS, handle mutlicalls, access phonebook etc. WTA also comprises event catalogues that...

30

enable the WAP content to intercept events like an incoming call, SMS etc.

Besides, it is noted that a WTA server may act in communication with a CSE or with a MSC or with a home location register (HLR) for the mentioned purposes.

Consequently, according to the present invention, there is an embodiment in which all forwarded calls are triggered either in the GMSC or in the visited mobile services switching center (VMSC) from the forwarding party originating basic call state model (O-BCSM). The triggered intelligent network service logic measures a total duration for the forwarded call. When a duration or price threshold is reached for a given call or alternatively for all forwarded calls within a certain time period, a WTA service indication is given for the terminal of the forwarding user. The user is then prompted for acceptance to continue the forwarded call. If there is no answer from the forwarding user within a specified time, the forwarded call is cleared. The WTA service indication and duration monitoring may be triggered only for numbers not within a list of allowed numbers.

The benefit of the use of WAP/WT A is that only a data message bearer is needed for the communication with the forwarding party. Another benefit of the use of WAP/WT A is the possibility for the WAP/WT A user agent to automatically indicate the forwarding content to the forwarding party without a need for her or him to separately check and retrieve incoming short messages.

Referring now to Fig. 3, an embodiment of the present invention will be described in the following, wherein

concrete examples for the contributing devices are given and the description is made by listing the process of signaling between these devices. Whenever it is described hereinafter that information is exchanged (words like
5 send, submit and so on) one should bear in mind that this is based on a signaling between the respective devices (this is also valid for Fig. 4 to be described later).

Specifically, Fig. 3 shows an embodiment of unconditional
10 forwarding delimited by utilizing the IN/WAP embodiment of the present invention.

At first, the A-terminal signals an setup message SETUP (a call setup message) to a calling party switch A-EX.
15 Then, the calling party switch A-EX submits an initial address message to the gateway mobile services switching center GMSC including, for example, numbers of the A-terminal and the B-terminal and so on. Next, a routing information request is sent from the GMSC to a home
20 location register HLR including the B-subscriber number and so on. Thereafter, the home location register HLR responds with a C-number (the number to which the call is forwarded) and a redirection cause for which the call is redirected. After that, the gateway mobile services
25 switching center sends an InitialDP message, i.e. a triggering message containing a detection point initializing containing the A-, B-, and C-number and the redirection cause to a CAMEL service environment CSE and a service logic.

30

At this point in the process, the delimitation service is started in the CAMEL service environment CSE. Thus, the CAMEL service environment CSE requests the reporting of call disconnection from the gateway mobile services
35 switching center GMSC. This essentially causes that a

control relationship remains between the CAMEL service environment CSE and the gateway services switching center GMSC. Then, the CAMEL service environment CSE instructs the gateway services switching center GMSC to continue
5 call processing.

Then, the gateway mobile services switching center GMSC signals an initial address message IAM to a destination party switch C-EX, and the destination party switch C-EX
10 answers with an answer message ANM. The answer event is then reported to the CAMEL service environment CSE, again followed by a respective call continue instruction.

Next, a timer is started and its expiry awaited. After
15 that expiry, the CAMEL service environment submits a content generation request to a WTA server. The forwarding content is generated into the WTA-server, e.g. a time of forwarding, the A-subscriber number, the redirection cause and so on. A uniform resource locator
20 URL is sent by the WTA server to the B-terminal/user agent MS-B/UA, e.g. a WAP browser.

Alternatively, the generated content, i.e. the WAP deck or hyper text markup language (HTML) page, is directly
25 pushed to the terminal using WAP push, i.e. a uniform resource location indication (WTA service indication) followed by a content retrieval by the terminal are not needed as separate steps. Additionally, in some implementations, the WTA server functionality and the
30 CAMEL service environment CSE could be integrated into one node and functionality, where the steps as shown in Fig. 3 for the WTA server and the CAMEL services environment are performed.

Referring now back to Fig. 3, the WTA server sends the uniform resource locator to the B-terminal/user agent MS-B/UA, e.g. a WAP browser. Then, the B-terminal/user agent MS-B/UA submits a uniform resource location
5 request, i.e. content request to the WTA server, which server answers the request, after which the WTA server is informed by the B-terminal/user agent MS-B/UA what to do further. Accordingly, the WTA server submits a result to the CAMEL services environment CSE which, in turn,
10 signals to the gateway mobile services switching center GMSC to release the call. A respective release message REL is sent from the gateway mobile services switching center firstly to the calling party switch A-EX and secondly to the destination party switch C-EX.

15 Although the process may continue further, the substantial signaling procedures according to this embodiment of the present invention are described so far.

20 According to still another embodiment of the present invention, the call forwarding can also be instructed by the CAMEL service environment CSE. This is the case, for example, where a forwarding service in the CAMEL service environment CSE is notified that the called party is
25 busy, unreachable or does not answer. The forwarding destination can in intelligent network based services be based on several other criteria like time-of-day, calling party number and forwarding party location (obtained to the CAMEL service environment CSE from the home location
30 register HLR or an event geographic location server), even some calling party selection via a voice menu provided by the forwarding service to the calling party is possible. The CAMEL service environment CSE instructs call forwarding to the MSC. The CAMEL service environment
35 CSE starts supervising the call, and notifies the

forwarding party when a specified time or charge limit has been reached.

The benefit of the use of the invention in the context of intelligent network (IN) based call forwarding services is that the called party may not be aware which forwarding conditions are applicable at a given moment and which have resulted in the forwarding of the call. Therefore, the called party should be made aware of the fact that the call forwarding has occurred.

Thus, as can be gathered from Fig. 4, a call is established from an A-terminal to a calling party switch A-EX by a setup message SETUP and from there to a gateway mobile services switching center. Therein, a triggering is obtained by a first home location register inquiry. Next, the gateway mobile services switching center GMSC sends an InitialDP message, i.e. a triggering message to the CAMEL service environment containing e.g. the calling and the called party numbers. The call forwarding or rerouting service is started at the CAMEL service environment CSE. Then, the CAMEL service environment CSE requests the report of outcomes in call setup, i.e. it arms the detection points for route select failure, busy, no answer and answer events. After that, the CAMEL service environment CSE allows the call setup to continue in the gateway mobile services switching center GMSC.

Next, a routing information is sent from the GMSC to a home location register HLR including the B-subscriber number and so on. In turn, the home location register requests a visited mobile services switching center VMSC to provide a terminal roaming number MSRN which is respectively answered by the visited mobile services switching center. As a consequence, the home location

register HLR responds to the gateway mobile services switching center with the terminal roaming number and data of the B-terminal. Accordingly, the call proceeds further from the gateway mobile services switching center
5 GMSC to the visited mobile services switching center VMSC, from which the call is setup to the B-terminal/user agent MS-B/UA.

However, according to this embodiment of the present
10 invention, the case is considered that the B-terminal does not reply. Hence, the gateway mobile services switching center reports to the CAMEL services environment with a basic call state model event 'no answer'. Then the CAMEL services environment CSE requests
15 the gateway mobile services switching center GMSC to route the call to the number C# by a using Connect operation. Then, the call is forwarded by the gateway mobile services switching center GMSC to the destination party switch C-EX.

20

If only a notification on call forwarding is desired, the steps of content generation request, content generation and so on should follow e.g. after the CAMEL service environment CSE has issued the Connect operation.

25

At some time, there will be an answer from the destination party switch C-EX. Next, a timer is started and its expiry awaited. After that expiry, the CAMEL services environment submits a content generation request
30 to a WTA server. The forwarding content is generated into the WTA-server, e.g. a time of forwarding, the A-subscriber number, the redirection cause and so on. Generally, the forwarding content may include the conditions that have resulted in call forwarding. A

uniform resource locator URL is sent by the WTA server to the B-Terminal/user agent MS-B/UA, e.g. a WAP browser.

In an alternative embodiment, the forwarding content may provide to the called party a selection where the forwarding party warns the calling party and the forwarded-to party that the call is about to be released. Later on, the forwarding party may select that the call is immediately released. The forwarding party may also be prompted for the duration the call is allowed to continue.

Alternatively, the generated content, i.e. the WAP deck or hyper text markup language (HTML) page, is directly pushed to the terminal using WAP push, i.e. a uniform resource location indication (WTA service indication) followed by a content retrieval by the terminal are not needed as separate steps. Additionally, in some implementations, the WTA server functionality and the CAMEL service environment CSE could be integrated into one node and functionality, where the steps as shown in Fig. 4 for the WTA server and the CAMEL services environment are performed.

Referring now back to Fig. 4, the WTA server sends the uniform resource locator to the B-terminal/user agent MS-B/UA, e.g. a WAP browser. Then, the B-terminal/user agent MS-B/UA submits a uniform resource location request, i.e. a content request to the WTA server, which server answers the request, after which the WTA server is informed by the B-terminal/user agent MS-B/UA what to do further. Accordingly, the WTA server submits a result to the CAMEL services environment CSE which, in turn, signals to the gateway mobile services switching center GMSC to release the call. With the performance of the

call releasing, the substantial parts of the signaling sequence according to the present embodiment of the present invention are depicted.

- 5 In still another embodiment of the present invention, the B-terminal/user agent MS-B/UA may be configured to automatically reply to the forwarding content. However, in that case the forwarding content may just be a data message in machine interpretable form. The data message
10 is received, interpreted and replied by a specific content downloaded to the terminal beforehand. The decision for reply is based on user preferences entered by the user beforehand.
- 15 In yet another embodiment, an executable forwarding content received by the terminal at the step of URL request reply, i.e. a wireless markup language deck or a hypertext markup language page or a Java code reads user stored preference data from the terminal and makes a
20 reply decision on its own to the WTA server.

As is described above, the present invention provides a method of notifying a call forwarding party about a forwarded call, said method comprising the steps of
25 forwarding a call S11 from a calling party T21 to a destination FD defined by said call forwarding party T22; establishing a content S12 of a notification about said forwarded call; and sending said notification S13 by a service NSS of a communication network to a terminal T22
30 of said call forwarding party, wherein said notification comprises said content.

It should be understood that the above description and accompanying figures are only intended to illustrate the
35 present invention by way of example. The preferred

embodiments of the present invention may thus vary within the scope of the attached claims.

Claims

1. A method of notifying a call forwarding party about a forwarded call, said method comprising the steps of
- 5 forwarding a call (S11) from a calling party (T21) to a destination (FD) defined by said call forwarding party (T22);
- establishing a content (S12) of a notification about said forwarded call; and
- 10 sending said notification (S13) by a service (NSS) of a communication network to a terminal (T22) of said call forwarding party, wherein said notification comprises said content.
- 15 2. A method according to claim 1, wherein said content comprises information about at least one of a calling party number, a call duration, a type of forwarding, a time of forwarding, a call charge and a number to which said call has been forwarded.
- 20 3. A method according to claim 1, wherein said information comprised by said content of said notification corresponds to data which is processable by said terminal (T22) of said call forwarding party.
- 25 4. A method according to claim 1, wherein said type of said notification is that of a message of the Short Message Service.
- 30 5. A method according to claim 1, wherein said type of said notification is that of terminal terminated Unstructured Supplementary Service Data.

6. A method according to claim 1, wherein said sending of the notification is performed by utilizing a packet data bearer.
- 5 7. A method according to claim 1, wherein said type of said notification is a speech transmission of a voice processing server (VPS).
- 10 8. A method according to claim 1, wherein said service (NSS) responsive for sending said notification to a terminal (T22) of a call forwarding party is a service within the Customized Applications for Mobile network Enhancement Logic Service Environment.
- 15 9. A method according to claim 1, wherein said service (NSS) responsive for sending said notification to a terminal (T22) of a call forwarding party is a service within a Wireless Telephony Applications server.
- 20 10. A method according to claim 1, wherein said service (NSS) responsive for sending said notification to a terminal (T22) of a call forwarding party is a service within intelligent network service control point or CAMEL service environment (CSE).
- 25 11. A method according to claim 1, wherein said call forwarding is requested by a forwarding service within intelligent network service control point or CAMEL service environment (CSE).
- 30 12. A method according to claim 1, wherein said content includes at least part of the conditions that have resulted in call forwarding.

13. A method according to claim 12, wherein said conditions are the data on which said forwarding service has made the decision to forward the call.
- 5 14. A method according to any one of claims 1 to 13, wherein a break-off condition of said forwarded call is predefined by a user of said terminal (T22), and said notification is sent when said break-off condition is fulfilled (S10), after which
- 10 said method further comprises the step of
prompting said user (S14, S15) of said terminal (T22) to accept or refuse a continuation of said forwarded call.
- 15 15. A method according to claim 14, wherein said break-off condition is one of a maximal call charge and a maximal call duration.
16. A method according to claim 14, wherein said break-
20 off condition depends on the calling party number, including the possibility that no break-off condition exists for some certain calling party numbers.
17. A method according to claim 14, wherein an input to
25 said terminal (T22) in reaction to said prompting (S14) is manually performed by said user.
18. A method according to claim 17, wherein said forwarded call is cleared if there is no input within a
30 specified time.
19. A method according to claim 14, wherein a reaction of said terminal (T22) to said prompting is automatically performed according to a presetting of said terminal
35 (T22), which presetting is input by said user.

20. A communication network comprising
a call forwarding service device (CFS) which is able
to determine a calling party number;
5 a device for measuring a call duration (CDM) of a
forwarding call; and
a service device (NSS) for sending a notification to
a terminal (T22) of a call forwarding party.
- 10 21. A communication network according to claim 20,
wherein said call forwarding service device (CFS) is also
able to determine a type of forwarding, a time of
forwarding, a call charge and a number (FD) to which said
call has been forwarded.
- 15 22. A communication network according to claim 20,
further comprising a voice processing server device
(VPS).
- 20 23. A communication network according to any one of the
claims 20 to 22, wherein at least some of the
functionalities of said call forwarding service device
(CFS), said measuring device (CDM), said notification
sending service device (NSS) and said voice processing
25 server device (VPS) are implemented into one single
device (SD).
24. A communication network according to any one of the
claims 20 to 22, wherein at least one of the
30 functionalities of said call forwarding service device
(CFS), said measuring device (CDM), said notification
sending service device (NSS) and said voice processing
server device (VPS) is distributed over at least two
different devices.

25. A terminal for a handling of call forwarding, said terminal (T22) comprising

means adapted for setting a call forwarding service device (CFS) of a communication network to which network
5 said terminal (T22) subscribes;

means adapted for receiving a notification about a forwarded call; and

means adapted for displaying a content of said notification.

10

26. A terminal according to claim 25, further comprising means for processing data corresponding to information comprised by said content of said notification.

15 27. A terminal according to claim 26, further comprising means for automatically performing a reaction (S15) to a prompting (S14) of a user of said terminal (T22) by a service (NSS) of said communication network for sending said notification, which automatic performance is preset
20 by said user.

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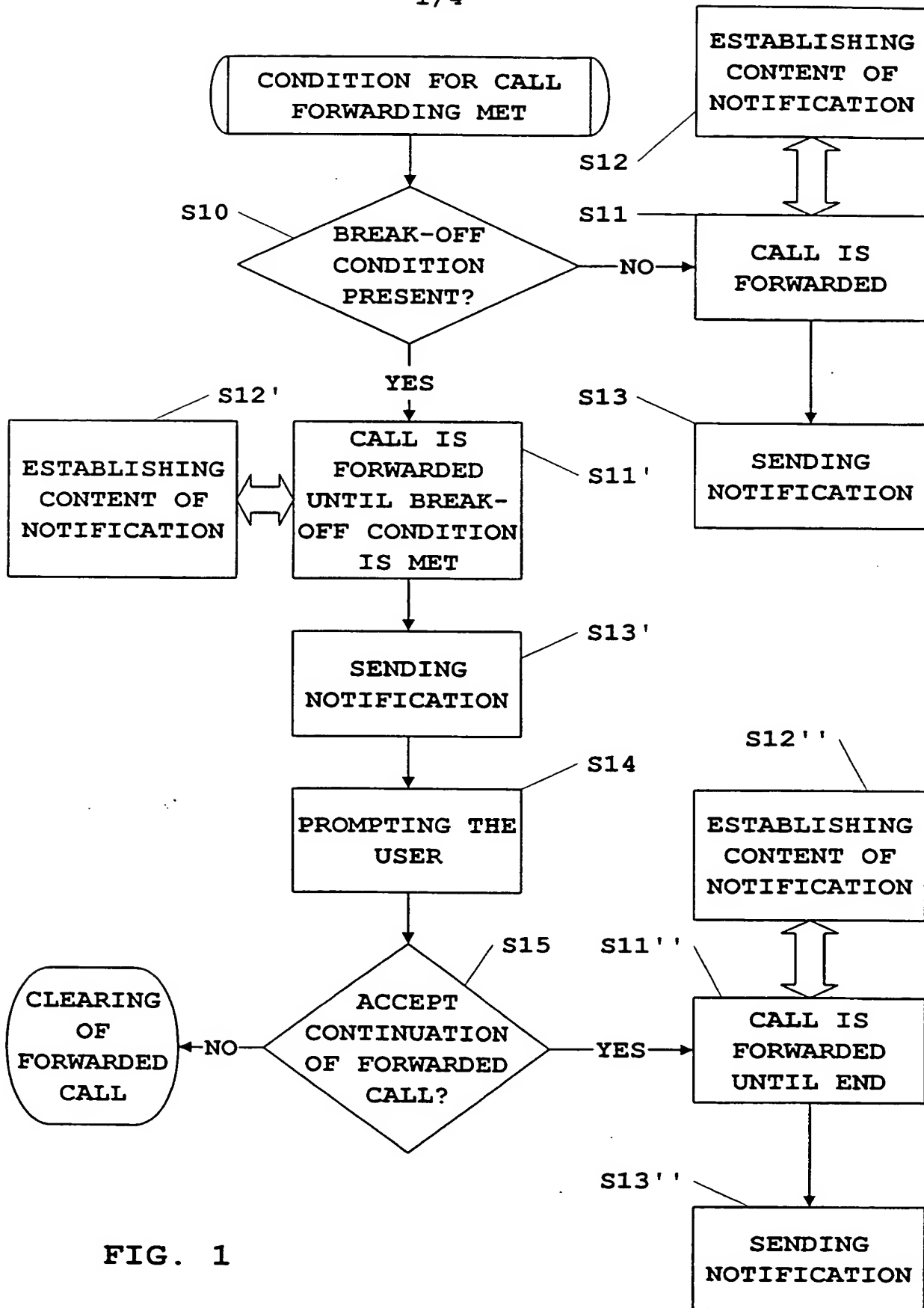


FIG. 1

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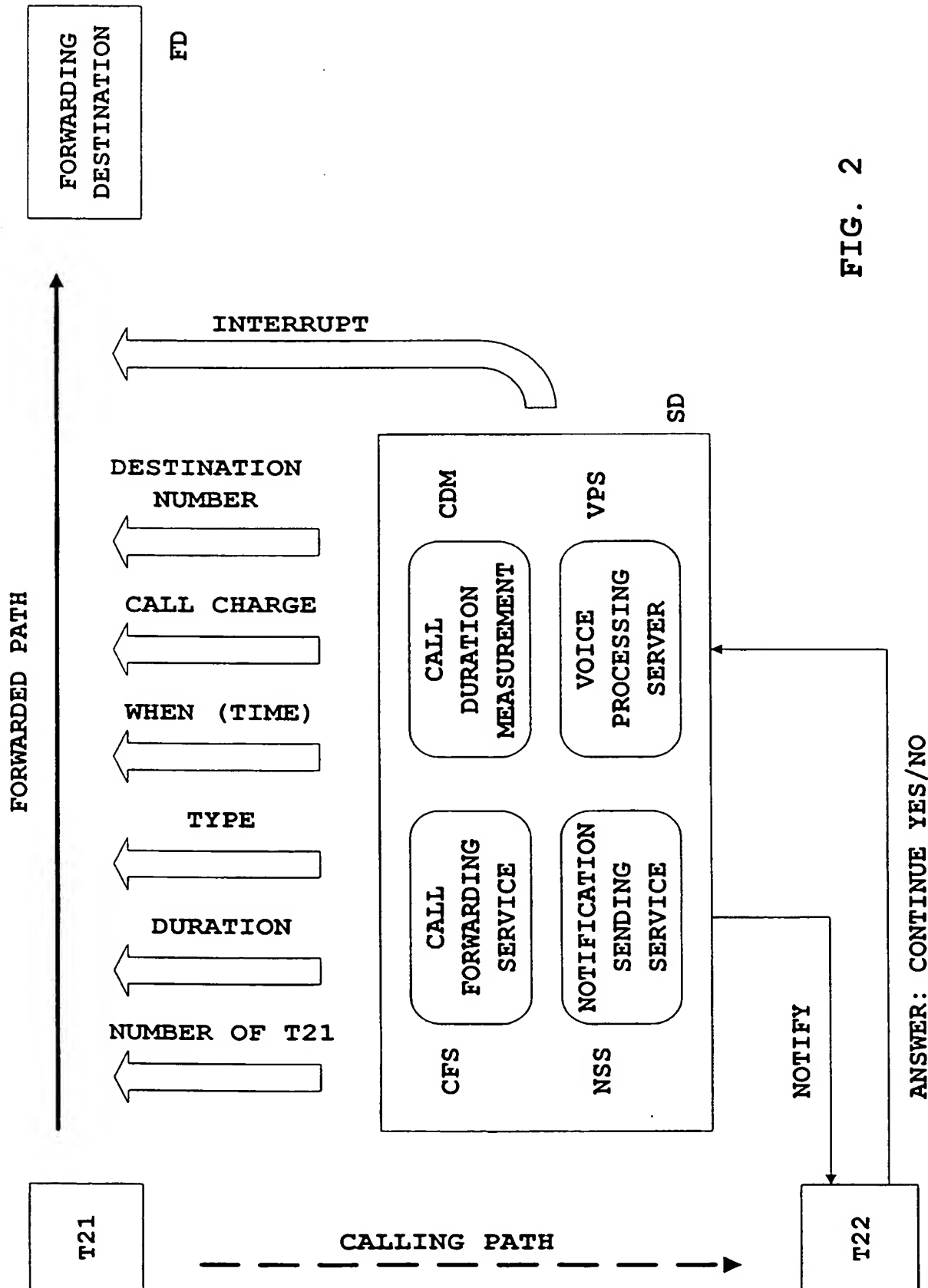


FIG. 2

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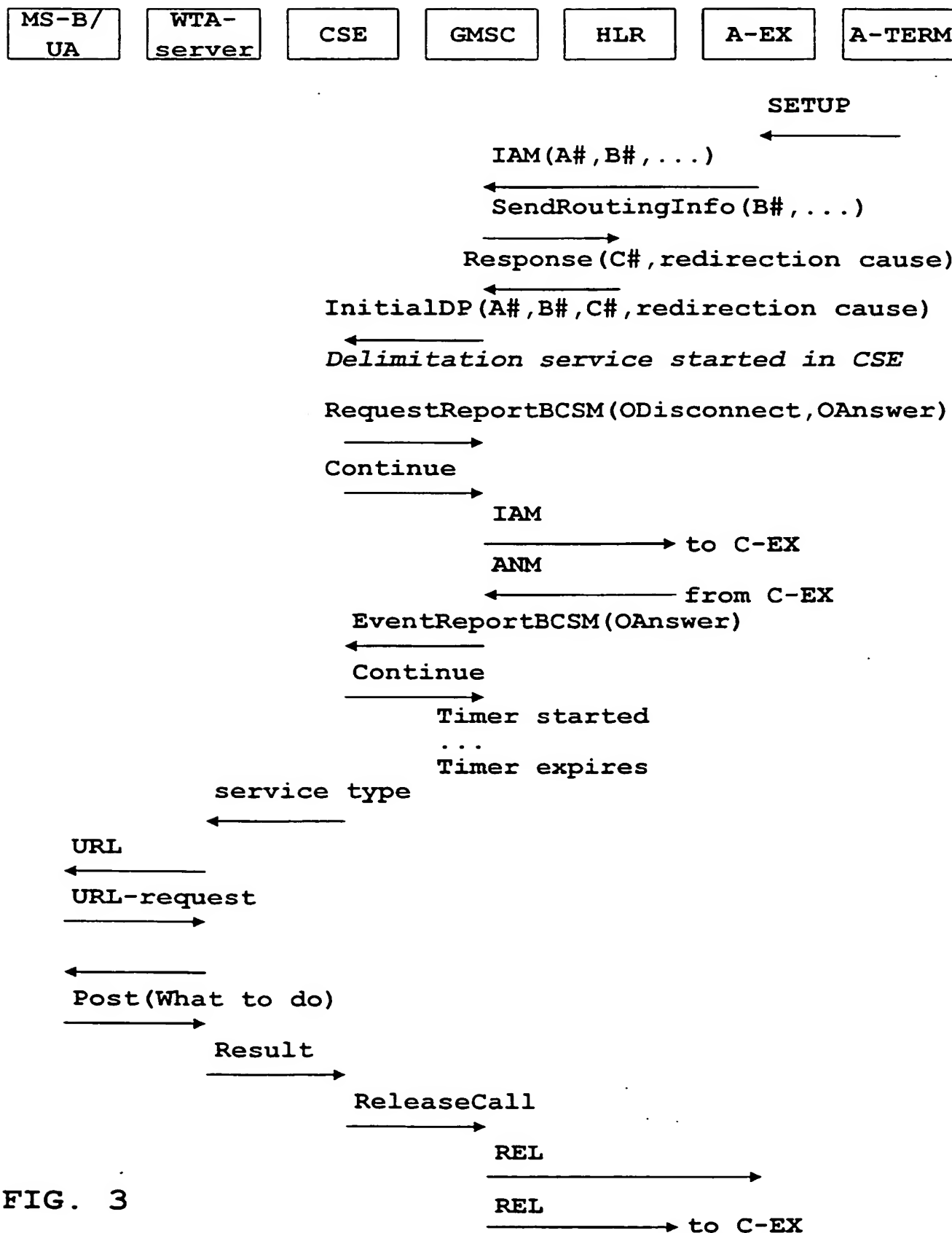


FIG. 3

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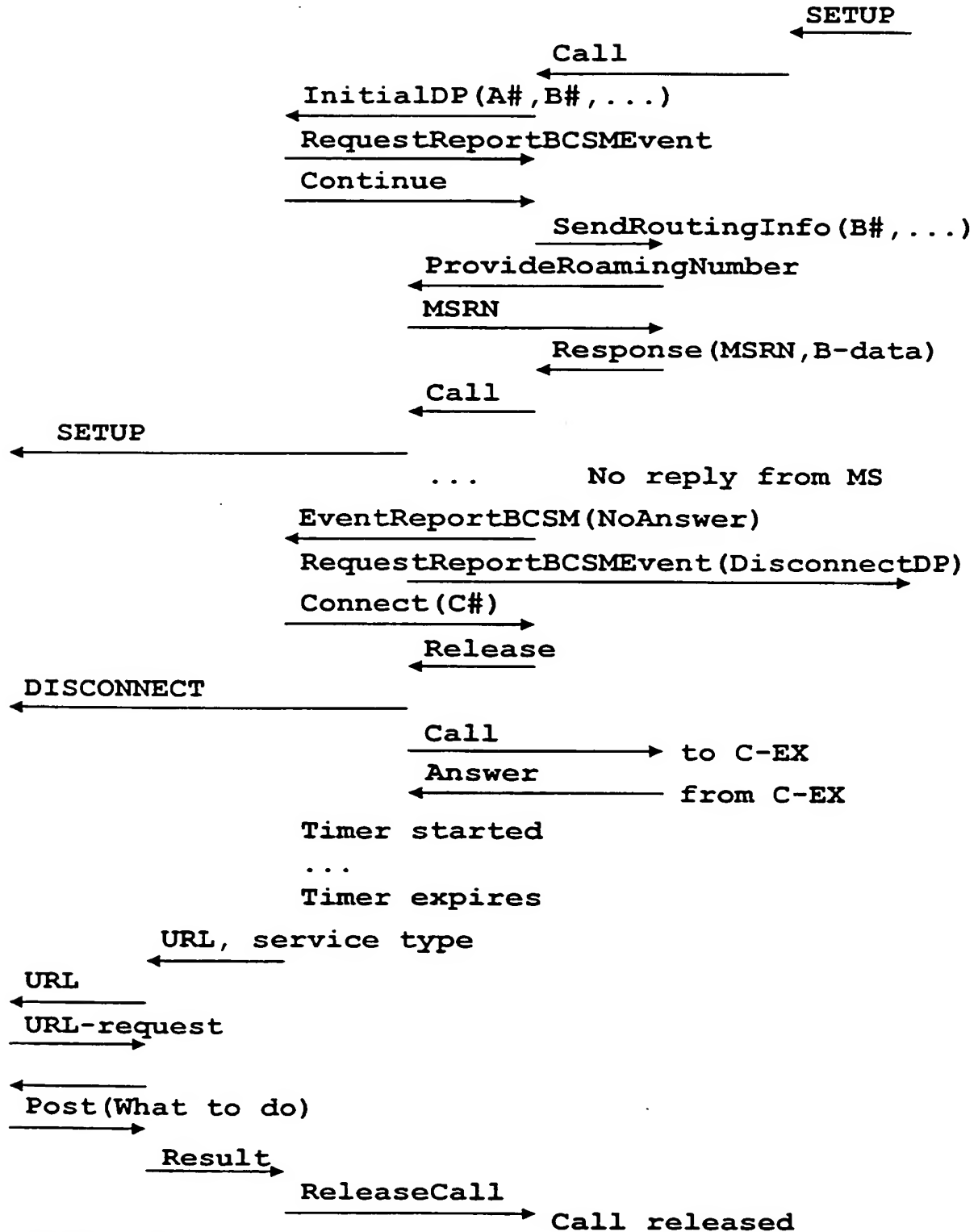


FIG. 4

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 99/06827

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04M3/54

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04M H04Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	BOLTJES C J: "FACILITIES FOR USERS OF SOPHO-SET FEATURE PHONES" PHILIPS TELECOMMUNICATION REVIEW, NL, PHILIPS TELECOMMUNICATIE INDUSTRIE N.V. HILVERSUM, vol. 48, no. 1, 1 March 1990 (1990-03-01), pages 20-27, XP000116333 page 4, right-hand column, paragraph 6.1 -page 5, left-hand column, paragraph 6.1	25
A	page 5, right-hand column, paragraph 6.2 -page 5, left-hand column, paragraph 6.2 figure 7 --- -/--	1-3, 20, 21, 25-27

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

24 February 2000

Date of mailing of the international search report

09/03/2000

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INTERNATIONAL SEARCH REPORT

International Application No
PCT/EP 99/06827

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	HUEBNER D L: "Intelligent telephones and generic switching: a distributed processing PABX architecture" ISS '84. XI INTERNATIONAL SWITCHING SYMPOSIUM, FLORENCE, ITALY, 7-11 MAY 1984, pages 23A1/1-6 vol.2, XP002131401 1984, Milano, Italy, Assoc. Elettrotecnica & Elettronica Italiana, Italy	25
A	page 3, left-hand column, paragraph 3 -right-hand column	1-3
X	EP 0 588 571 A (SONY CORP) 23 March 1994 (1994-03-23) column 1, line 1 -column 4, line 18	25
A	column 6, line 32 -column 9, line 27	1-3, 6, 7, 12-17, 19-24, 26, 27
A	US 5 657 382 A (TAMAGAWA NORIKO ET AL) 12 August 1997 (1997-08-12) column 4, line 27 -column 7, line 12	1-3, 20-22, 25-27
A	US 4 476 349 A (COTTRELL JENNIE L ET AL) 9 October 1984 (1984-10-09) cited in the application column 26, line 24 - line 60 claims 12-19	1-3, 20-22, 25-27
A	US 5 930 700 A (SOPER E SCOTT ET AL) 27 July 1999 (1999-07-27) column 3, line 18 - line 63 column 5, line 64 -column 6, line 54	1-6, 13, 16-23, 25-27

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 99/06827

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0588571 A	23-03-1994	DE 69325687 D	26-08-1999
		DE 69325687 T	27-01-2000
		JP 6209377 A	26-07-1994
		US 5422942 A	06-06-1995
US 5657382 A	12-08-1997	JP 5110693 A	30-04-1993
US 4476349 A	09-10-1984	CA 1191646 A	06-08-1985
		EP 0104240 A	04-04-1984
		IT 1194561 B	22-09-1988
		KR 9200105 B	09-01-1992
		WO 8303509 A	13-10-1983
US 5930700 A	27-07-1999	WO 9720423 A	05-06-1997

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PCT REQUEST

Original (for SUBMISSION) - printed on 15.09.1999 03:11:01 PM

0	For receiving Office use only	
0-1	International Application No.	
0-2	International Filing Date	
0-3	Name of receiving Office and "PCT International Application"	
0-4	Form - PCT/RO/101 PCT Request Prepared using	PCT-EASY Version 2.83 (updated 01.03.1999)
0-5	Petition The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty	
0-6	Receiving Office (specified by the applicant)	European Patent Office (EPO) (RO/EP)
0-7	Applicant's or agent's file reference	WO 24421
I	Title of invention	METHOD OF NOTIFYING A CALL FORWARDING PARTY
II	Applicant	
II-1	This person is:	applicant only
II-2	Applicant for	all designated States except US
II-4	Name	NOKIA TELECOMMUNICATIONS OY
II-5	Address:	Keilalahdentie 4 FIN-02150 Espoo Finland
II-6	State of nationality	FI
II-7	State of residence	FI
II-8	Telephone No.	+358 9 1807 0
II-9	Facsimile No.	+358 9 1807 496
III-1	Applicant and/or inventor	
III-1-1	This person is:	applicant and inventor
III-1-2	Applicant for	US only
III-1-4	Name (LAST, First)	SIISKONEN, Marko
III-1-5	Address:	Myllärinkatu 6 A 7 FIN-37100 Nokia Finland
III-1-6	State of nationality	FI
III-1-7	State of residence	FI

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PCT REQUEST

WO 24421

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III-2	Applicant and/or Inventor	applicant and inventor US only WALLENIOUS, Jukka Keinutie 8 G 41 FIN-00940 Helsinki Finland FI FI
III-2-1	This person is:	
III-2-2	Applicant for	
III-2-4	Name (LAST, First)	
III-2-5	Address:	
III-2-6	State of nationality	
III-2-7	State of residence	
IV-1	Agent or common representative; or address for correspondence The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:	agent PELLMANN, Hans-Bernd Tiedtke-Bühling-Kinne Bavariaring 4 D-80336 Munich Germany +89 54 46 90 +89 53 26 11
IV-1-1	Name (LAST, First)	
IV-1-2	Address:	
IV-1-3	Telephone No.	
IV-1-4	Facsimile No.	
IV-2	Additional agent(s)	additional agent(s) with same address as first named agent TIEDTKE, Harro; BÜHLING, Gerhard; KINNE, Reinhard; GRAMS, Klaus; LINK, Annette; VOLLNHALS, Aurel; LESON, Thomas, Johannes, Alois; TRÖSCH, Hans-Ludwig; CHIVAROV, Georgi; GRILL, Matthias; KÜHN, Alexander; OSER, Andreas; BÖCKELEN, Rainer
IV-2-1	Name(s)	
V	Designation of States	AP: GH GM KE LS MW SD SZ UG ZW and any other State which is a Contracting State of the Harare Protocol and of the PCT EA: AM AZ BY KG KZ MD RU TJ TM and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT EP: AT BE CH&LI CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE and any other State which is a Contracting State of the European Patent Convention and of the PCT OA: BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG and any other State which is a member State of OAPI and a Contracting State of the PCT
V-1	Regional Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	

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PCT REQUEST

Original (for SUBMISSION) - printed on 15.09.1999 03:11:01 PM

V-2	National Patent (other kinds of protection or treatment, if any, are specified between parentheses after the designation(s) concerned)	AE AL AM AT AU AZ BA BB BG BR BY CA CH&LI CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZA ZW	
V-5	Precautionary Designation Statement In addition to the designations made under items V-1, V-2 and V-3, the applicant also makes under Rule 4.9(b) all designations which would be permitted under the PCT except any designation(s) of the State(s) indicated under item V-6 below. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit.		
V-6	Exclusion(s) from precautionary designations	NONE	
VI	Priority claim	NONE	
VII-1	International Searching Authority Chosen	European Patent Office (EPO) (ISA/EP)	
VIII	Check list	number of sheets	electronic file(s) attached
VIII-1	Request	4	-
VIII-2	Description	23	-
VIII-3	Claims	5	-
VIII-4	Abstract	1	wo24421a.txt
VIII-5	Drawings	4	-
VIII-7	TOTAL	37	
VIII-8	Accompanying items	paper document(s) attached	electronic file(s) attached
VIII-16	Fee calculation sheet	✓	-
VIII-16	PCT-EASY diskette	-	diskette
VIII-18	Figure of the drawings which should accompany the abstract	1	
VIII-19	Language of filing of the international application	English	
IX-1	Signature of applicant or agent		
IX-1-1	Name (LAST, First)	PELLMANN, Hans-Bernd	

FOR RECEIVING OFFICE USE ONLY

10-1	Date of actual receipt of the purported international application	
10-2	Drawings:	
10-2-1	Received	
10-2-2	Not received	
10-3	Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application	
10-4	Date of timely receipt of the required corrections under PCT Article 11(2)	

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PCT REQUEST

WO 24421

Original (for SUBMISSION) - printed on 15.09.1999 03:11:01 PM

10-5	International Searching Authority	ISA/EP
10-6	Transmittal of search copy delayed until search fee is paid	

FOR INTERNATIONAL BUREAU USE ONLY

11-1	Date of receipt of the record copy by the International Bureau	
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PATENT COOPERATION TREATY

PCT

NOTICE INFORMING THE APPLICANT OF THE
COMMUNICATION OF THE INTERNATIONAL
APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

From the INTERNATIONAL BUREAU

To:
PELLMANN, Hans-Bernd
Tiedtke-Bühling-Kinne
Bavariaring 4
D-80336 Munich
ALLEMAGNE**EINGEGANGEN**
Patentanwälte
- 2. April 2001
TIEDTKE · BÜHLING · KINNE
& PARTNER (GmbH)

Date of mailing (day/month/year) 22 March 2001 (22.03.01)		
Applicant's or agent's file reference WO 24421		
IMPORTANT NOTICE		
International application No. PCT/EP99/06827	International filing date (day/month/year) 15 September 1999 (15.09.99)	Priority date (day/month/year)
Applicant NOKIA NETWORKS OY et al		

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this Notice:

AU, KP, KR, US

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present Notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:

AE, AL, AM, AP, AT, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EA, EE, EP, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, OA,
PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW

The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this Notice is a copy of the international application as published by the International Bureau on
22 March 2001 (22.03.01) under No. WO 01/20888

REMINDER REGARDING CHAPTER II (Article 31(2)(a) and Rule 54.2)

If the applicant wishes to postpone entry into the national phase until 30 months (or later in some Offices) from the priority date, a demand for international preliminary examination must be filed with the competent International Preliminary Examining Authority before the expiration of 19 months from the priority date.

It is the applicant's sole responsibility to monitor the 19-month time limit.

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

REMINDER REGARDING ENTRY INTO THE NATIONAL PHASE (Article 22 or 39(1))

If the applicant wishes to proceed with the international application in the national phase, he must, within 20 months or 30 months, or later in some Offices, perform the acts referred to therein before each designated or elected Office.

For further important information on the time limits and acts to be performed for entering the national phase, see the Annex to Form PCT/IB/301 (Notification of Receipt of Record Copy) and Volume II of the PCT Applicant's Guide.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer J. Zahra
Facsimile No. (41-22) 740.14.35	Telephone No. (41-22) 338.83.38

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PATENT COOPERATION TREATY

PCT

From the INTERNATIONAL BUREAU

INFORMATION CONCERNING ELECTED OFFICES NOTIFIED OF THEIR ELECTION

(PCT Rule 61.3)

To: LESON, Thomas, Johannes, Alois Tiedtke-Bühling-Kinne & Partner GbR TBK-Patent Bavariaring 4 D-80336 Munich ALLEMAGNE	EINGEGANGEN Patentanwälte 21. Juni 2001 TIEDTKE · BÜHLING · KINNE & PARTNER (GbR)
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Date of mailing (day/month/year) 13 June 2001 (13.06.01)		IMPORTANT INFORMATION	
Applicant's or agent's file reference WO 24421			
International application No. PCT/EP99/06827	International filing date (day/month/year) 15 September 1999 (15.09.99)	Priority date (day/month/year)	
Applicant NOKIA NETWORKS OY et al			

1. The applicant is hereby informed that the International Bureau has, according to Article 31(7), notified each of the following Offices of its election:

EP : AT,BE,CH,CY,DE,DK,ES,FI,FR,GB,GR,IE,IT,LU,MC,NL,PT,SE
 National : AU,BG,CA,CN,CZ,DE,IL,JP,KP,KR,MN,NO,NZ,PL,RO,RU,SE,SK,US

2. The following Offices have waived the requirement for the notification of their election; the notification will be sent to them by the International Bureau only upon their request:

AP : GH,GM,KE,LS,MW,SD,SL,SZ,TZ,UG,ZW
 EA : AM,AZ,BY,KG,KZ,MD,RU,TJ,TM
 OA : BF,BJ,CF,CG,CI,CM,GA,GN,GW,ML,MR,NE,SN,TD,TG
 National : AE,AL,AM,AT,AZ,BA,BB,BR,BY,CH,CU,DK,EE,ES,FI,GB,GD,GE,GH,GM,HR,
 HU,ID,IN,IS,KE,KG,KZ,LC,LK,LR,LS,LT,LU,LV,MD,MG,MK,MW,MX,PT,SD,SG,SI,SL,
 TJ,TM,TR,TT,UA,UG,UZ,VN,YU,ZA,ZW

3. The applicant is reminded that he must enter the "national phase" before the expiration of 30 months from the priority date before each of the Offices listed above. This must be done by paying the national fee(s) and furnishing, if prescribed, a translation of the international application (Article 39(1)(a)), as well as, where applicable, by furnishing a translation of any annexes of the international preliminary examination report (Article 36(3)(b) and Rule 74.1).

Some offices have fixed time limits expiring later than the above-mentioned time limit. For detailed information about the applicable time limits and the acts to be performed upon entry into the national phase before a particular Office, see Volume II of the PCT Applicant's Guide.

The entry into the European regional phase is postponed until 31 months from the priority date for all States designated for the purposes of obtaining a European patent.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. (41-22) 740.14.35	Authorized officer: Claudio Borton Telephone No. (41-22) 338.83.38
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PATENT COOPERATION TREATY

PCT

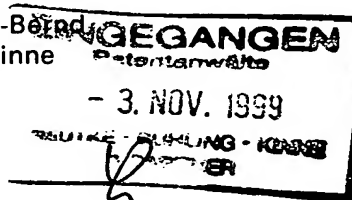
NOTIFICATION OF RECEIPT OF
RECORD COPY

(PCT Rule 24.2(a))

From the INTERNATIONAL BUREAU

To:

PELLMANN, Hans-Böndgen
Tiedtke-Bühling-Kinne
Bavariaring 4
D-80336 Munich
ALLEMAGNE



Date of mailing (day/month/year) 26 October 1999 (26.10.99)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference WO 24421	International application No. PCT/EP99/06827

The applicant is hereby notified that the International Bureau has received the record copy of the international application as detailed below.

Name(s) of the applicant(s) and State(s) for which they are applicants:

NOKIA TELECOMMUNICATIONS OY (for all designated States except US)

SIISKONEN, Marko et al (for US)

International filing date : 15 September 1999 (15.09.99)

Priority date(s) claimed :

Date of receipt of the record copy
by the International Bureau : 19 October 1999 (19.10.99)

List of designated Offices :

AP : GH,GM,KE,LS,MW,SD,SL,SZ,TZ,UG,ZW

EA : AM,AZ,BY,KG,KZ,MD,RU,TJ,TM

EP : AT,BE,CH,CY,DE,DK,ES,FI,FR,GB,GR,IE,IT,LU,MC,NL,PT,SE

OA : BF,BJ,CF,CG,CI,CM,GA,GN,GW,ML,MR,NE,SN,TD,TG

National : AE,AL,AM,AT,AU,AZ,BA,BB,BG,BR,BY,CA,CH,CN,CU,CZ,DE,DK,EE,ES,FI,GB,GD,GE,
GH,GM,HR,HU,ID,IL,IN,IS,JP,KE,KG,KP,KR,KZ,LC,LK,LR,LS,LT,LU,LV,MD,MG,MK,MN,MW,MX,
NO,NZ,PL,PT,RO,RU,SD,SE,SG,SI,SK,SL,TJ,TM,TR,TT,UA,UG,US,UZ,VN,YU,ZA,ZW

ATTENTION

The applicant should carefully check the data appearing in this Notification. In case of any discrepancy between these data and the indications in the international application, the applicant should immediately inform the International Bureau.

In addition, the applicant's attention is drawn to the information contained in the Annex, relating to:

- ☒ time limits for entry into the national phase
- ☒ confirmation of precautionary designations
- ☐ requirements regarding priority documents

A copy of this Notification is being sent to the receiving Office and to the International Searching Authority.

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. (41-22) 740.14.35	Authorized officer: Dominique DELMAS Telephone No. (41-22) 338.83.38
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INFORMATION ON TIME LIMITS FOR ENTERING THE NATIONAL PHASE

The applicant is reminded that the "national phase" must be entered before each of the designated Offices indicated in the Notification of Receipt of Record Copy (Form PCT/IB/301) by paying national fees and furnishing translations, as prescribed by the applicable national laws.

The time limit for performing these procedural acts is **20 MONTHS** from the priority date or, for those designated States which the applicant elects in a demand for international preliminary examination or in a later election, **30 MONTHS** from the priority date, provided that the election is made before the expiration of 19 months from the priority date. Some designated (or elected) Offices have fixed time limits which expire even later than 20 or 30 months from the priority date. In other Offices an extension of time or grace period, in some cases upon payment of an additional fee, is available.

In addition to these procedural acts, the applicant may also have to comply with other special requirements applicable in certain Offices. **It is the applicant's responsibility** to ensure that the necessary steps to enter the national phase are taken in a timely fashion. Most designated Offices do not issue reminders to applicants in connection with the entry into the national phase.

For detailed information about the procedural acts to be performed to enter the national phase before each designated Office, the applicable time limits and possible extensions of time or grace periods, and any other requirements, see the relevant Chapters of Volume II of the PCT Applicant's Guide. Information about the requirements for filing a demand for international preliminary examination is set out in Chapter IX of Volume I of the PCT Applicant's Guide.

GR and ES became bound by PCT Chapter II on 7 September 1996 and 6 September 1997, respectively, and may, therefore, be elected in a demand or a later election filed on or after 7 September 1996 and 6 September 1997, respectively, regardless of the filing date of the international application. (See second paragraph above.)

Note that only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination.

CONFIRMATION OF PRECAUTIONARY DESIGNATIONS

This notification lists only specific designations made under Rule 4.9(a) in the request. It is important to check that these designations are correct. Errors in designations can be corrected where precautionary designations have been made under Rule 4.9(b). The applicant is hereby reminded that any precautionary designations may be confirmed according to Rule 4.9(c) before the expiration of 15 months from the priority date. If it is not confirmed, it will automatically be regarded as withdrawn by the applicant. There will be no reminder and no invitation. Confirmation of a designation consists of the filing of a notice specifying the designated State concerned (with an indication of the kind of protection or treatment desired) and the payment of the designation and confirmation fees. Confirmation must reach the receiving Office within the 15-month time limit.

REQUIREMENTS REGARDING PRIORITY DOCUMENTS

For applicants who have not yet complied with the requirements regarding priority documents, the following is recalled.

Where the priority of an earlier national, regional or international application is claimed, the applicant must submit a copy of the said earlier application, certified by the authority with which it was filed ("the priority document") to the receiving Office (which will transmit it to the International Bureau) or directly to the International Bureau, before the expiration of 16 months from the priority date, provided that any such priority document may still be submitted to the International Bureau before that date of international publication of the international application, in which case that document will be considered to have been received by the International Bureau on the last day of the 16-month time limit (Rule 17.1(a)).

Where the priority document is issued by the receiving Office, the applicant may, instead of submitting the priority document, request the receiving Office to prepare and transmit the priority document to the International Bureau. Such request must be made before the expiration of the 16-month time limit and may be subjected by the receiving Office to the payment of a fee (Rule 17.1(b)).

If the priority document concerned is not submitted to the International Bureau or if the request to the receiving Office to prepare and transmit the priority document has not been made (and the corresponding fee, if any, paid) within the applicable time limit indicated under the preceding paragraphs, any designated State may disregard the priority claim, provided that no designated Office may disregard the priority claim concerned before giving the applicant an opportunity to furnish the priority document within a time limit which is reasonable under the circumstances.

Where several priorities are claimed, the priority date to be considered for the purposes of computing the 16-month time limit is the filing date of the earliest application whose priority is claimed.

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PATENT COOPERATION TREATY

PCT

From the INTERNATIONAL BUREAU

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

To:

PELLMANN, Hans-Bernd

Tiedtke-Bühlingstrasse

Bavariaring 4

D-80336 Munich

ALLEMAGNE

EINGEGANGEN

17. DEZ. 1999

TIEDTKE - BÜHLING - MÜNCHEN
A PARTNER

Date of mailing (day/month/year)

07 December 1999 (07.12.99)

Applicant's or agent's file reference

WO 24421

IMPORTANT NOTIFICATION

International application No.

PCT/EP99/06827

International filing date (day/month/year)

15 September 1999 (15.09.99)

1. The following indications appeared on record concerning:



the applicant



the inventor



the agent



the common representative

Name and Address

NOKIA TELECOMMUNICATIONS OY
Keilalahdentie 4
FIN-02150 Espoo
Finland

State of Nationality

FI

State of Residence

FI

Telephone No.

+358 9 1807 0

Facsimile No.

+358 9 1807 496

Teleprinter No.

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:



the person



the name



the address



the nationality



the residence

Name and Address

NOKIA NETWORKS OY
Keilalahdentie 4
FIN-02150 Espoo
Finland

State of Nationality

FI

State of Residence

FI

Telephone No.

+358 9 1807 0

Facsimile No.

+358 9 1807 496

Teleprinter No.

3. Further observations, if necessary:

4. A copy of this notification has been sent to:



the receiving Office



the International Searching Authority



the International Preliminary Examining Authority



the designated Offices concerned



the elected Offices concerned



other:

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

Mougamadou Abidine

Telephone No.: (41-22) 338.83.38

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RECEIVED
EINGEGANGEN

16. Jan. 2002

TBK - PATENT

PATENT COOPERATION TREATY

PCT

From the INTERNATIONAL BUREAU

To:

LESON, Thomas, Johannes, Alois
Tiedtke-Bühling-Kinne & Partner GbR
TBK-Patent
Bavariaring 4
D-80336 Munich
ALLEMAGNE

NOTIFICATION OF THE RECORDING
OF A CHANGE

(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

Date of mailing (day/month/year) 10 January 2002 (10.01.02)	IMPORTANT NOTIFICATION
Applicant's or agent's file reference <u>WO 24421</u>	
International application No. PCT/EP99/06827	International filing date (day/month/year) 15 September 1999 (15.09.99)

1. The following indications appeared on record concerning:

☒ the applicant ☐ the inventor ☐ the agent ☐ the common representative

Name and Address NOKIA NETWORKS OY Keilalahdentie 4 FIN-02150 Espoo Finland	State of Nationality FI	State of Residence FI
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐ the person ☒ the name ☐ the address ☐ the nationality ☐ the residence

Name and Address NOKIA CORPORATION Keilalahdentie 4 FIN-02150 Espoo Finland	State of Nationality FI	State of Residence FI
	Telephone No.	
	Facsimile No.	
	Teleprinter No.	

3. Further observations, if necessary:

4. A copy of this notification has been sent to:

☒ the receiving Office ☐ the designated Offices concerned
☐ the International Searching Authority ☒ the elected Offices concerned
☒ the International Preliminary Examining Authority ☐ other:

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No.: (41-22) 740.14.35	Authorized officer François BAECHELER Telephone No.: (41-22) 338.83.88
---	--

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PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
 US Department of Commerce
 United States Patent and Trademark
 Office, PCT
 2011 South Clark Place Room
 CP2/5C24
 Arlington, VA 22202
 ETATS-UNIS D'AMERIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 13 June 2001 (13.06.01)	
International application No. PCT/EP99/06827	Applicant's or agent's file reference WO 24421
International filing date (day/month/year) 15 September 1999 (15.09.99)	Priority date (day/month/year)
Applicant SIISKONEN, Marko et al	

1. The designated Office is hereby notified of its election made:

☒

in the demand filed with the International Preliminary Examining Authority on:

17 April 2001 (17.04.01)

☐

in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was☐

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO
 34, chemin des Colombettes
 1211 Geneva 20, Switzerland

Authorized officer

Claudio Borton

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PATENT COOPERATION TREATY

PCT

NOTIFICATION OF THE RECORDING
OF A CHANGE(PCT Rule 92bis.1 and
Administrative Instructions, Section 422)

From the INTERNATIONAL BUREAU

To:

LESON, Thomas, Johannes, Alois
Tiedtke-Bühling-Kinne & Partner GbR
TBK-Patent
Bavariaring 4
D-80336 Munich
ALLEMAGNE

Date of mailing (day/month/year)

13 juin 2001 (13.06.01)

Applicant's or agent's file reference

WO 24421

International application No.

PCT/EP99/06827

IMPORTANT NOTIFICATION

International filing date (day/month/year)

15 septembre 1999 (15.09.99)

1. The following indications appeared on record concerning:

☐

the applicant

☐

the inventor

☒

the agent

☐

the common representative

Name and Address

PELLMANN, Hans-Bernd
Tiedtke-Bühling-Kinne
Bavariaring 4
D-80336 Munich
Germany

State of Nationality

State of Residence

Telephone No.

+89 54 46 90

Facsimile No.

+89 53 26 11

Teleprinter No.

2. The International Bureau hereby notifies the applicant that the following change has been recorded concerning:

☐

the person

☐

the name

☒

the address

☐

the nationality

☐

the residence

Name and Address

LESON, Thomas, Johannes, Alois
Tiedtke-Bühling-Kinne & Partner GbR
TBK-Patent
Bavariaring 4
D-80336 Munich
Germany

State of Nationality

State of Residence

Telephone No.

+89 54 46 90

Facsimile No.

+89 53 26 11

Teleprinter No.

3. Further observations, if necessary:

The indication of a new address of the agent on the Demand (Form PCT/IPEA/401) has been considered a request for recording a change under Rule 92bis. In case of disagreement, the International Bureau should be notified immediately.

4. A copy of this notification has been sent to:

☒

the receiving Office

☐

the International Searching Authority

☒

the International Preliminary Examining Authority

☐

the designated Offices concerned

☒

the elected Offices concerned

☐

other:

The International Bureau of WIPO
34, chemin des Colombettes
1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

Claudio Borton

Telephone No.: (41-22) 338.83.38

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PATENT COOPERATION TREATY

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

PCT

NOTIFICATION OF TRANSMITTAL OF THE INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Rule 71.1)

To:

LESON, Thomas, Johannes, Alois
TIEDTKE, BÜHLING, KINNE & PARTNER
Bavariaring 4
D-80336 München
ALLEMAGNE

RECEIVED
EINGEGANGEN

20. Dez. 2001

TBK - PATENT

Date of mailing
(day/month/year)

19.12.2001

Applicant's or agent's file reference

WO 24421

IMPORTANT NOTIFICATION

International application No.
PCT/EP99/06827

International filing date (day/month/year)
15/09/1999

Priority date (day/month/year)

Applicant

NOKIA NETWORKS OY et al.

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.


4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/

 European Patent Office
D-80293 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Authorized officer

Cornudet-Henschel, V

Tel. +49 89 2399-7371



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PATENT COOPERATION TREATY

PCT

RECEIVED
EINGEGANGEN

20. Dez. 2001

TBK - PATENT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference WO 24421	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/EP99/06827	International filing date (day/month/year) 15/09/1999	Priority date (day/month/year)
International Patent Classification (IPC) or national classification and IPC H04M3/54		
Applicant NOKIA NETWORKS OY et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.



2. This REPORT consists of a total of 4 sheets, including this cover sheet.

- ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 1 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 17/04/2001	Date of completion of this report 19.12.2001
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Veaux, C Telephone No. +49 89 2399 8820 

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/EP99/06827

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

Description, pages:

1-23 as originally filed

Claims, No.:

1-24,26,27 as originally filed

25 as received on 15/11/2001 with letter of 15/11/2001

Drawings, sheets:

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

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**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/EP99/06827

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims 1-27
	No: Claims
Inventive step (IS)	Yes: Claims 1-27
	No: Claims
Industrial applicability (IA)	Yes: Claims 1-27
	No: Claims

- 2. Citations and explanations
see separate sheet**

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**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP99/06827

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement

The invention relates to a method of notifying a call forwarding party about a forwarded call (independent claim 1) and to a corresponding communication network (independent claim 20) and terminal (independent claim 25).

US-A-4476349 cited in the international search report and acknowledged in the description relates to a call message service which generates and stores a callback message for a called terminal. This message is able to notice the identity of the calling terminal and the identity of the destination of the forwarding.

Drawback of this prior art is that the information about the forwarded calls provided by this service must be retrieved by dialling a feature code from a phone.

The present invention provides a method of notifying a call forwarding party about a forwarded call which is free from this drawback.

According to the features of the independent claims a notification comprising a content about a forwarded call is sent to the terminal of the forwarding party.

None of the available prior art documents discloses or renders obvious the combination of features of the independent claims. Claims 1, 20 and 25 thus fulfil the requirements of Article 33(2) and 33(3) PCT regarding novelty and inventive step.

The remaining claims are dependent on claims 1, 20 or 25 and therefore also fulfil the requirements of Article 33(2) and (3) PCT.

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Enclosure of November 15, 2001

PCT Patent Application No.: PCT/EP 99/06827
NOKIA NETWORKS OY
Our ref.: WO 24421

New claim 25

25. A terminal for forwarding a call, said terminal (T22) comprising

means adapted for setting a call forwarding service device (CFS) of a communication network to which network said terminal (T22) subscribes;

means adapted for receiving a notification from said call forwarding service device (CFS) about a forwarded call which was directed to and forwarded by said terminal according to the setting of said corresponding means; and

means adapted for displaying a content of said notification.

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PATENT COOPERATION TREATY

From the:
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

To:

LESON, Thomas, Johannes, Alois
TIEDTKE, BÜHLING, KINNE & PARTNER
Bavariaring 4
D-80336 München
ALLEMAGNE

RECEIVED
EINGEGANGEN

27. Aug. 2001

TBK - PATENT

PCT

WRITTEN OPINION

(PCT Rule 66)

Date of mailing
(day/month/year)

23.08.2001

Applicant's or agent's file reference

WO 24421

REPLY DUE

within 3 month(s)
from the above date of mailing

International application No.

PCT/EP99/06827

International filing date (day/month/year)

15/09/1999

Priority date (day/month/year)

International Patent Classification (IPC) or both national classification and IPC

H04M3/54

Applicant

NOKIA NETWORKS OY et al.

1. This written opinion is the **first** drawn up by this International Preliminary Examining Authority.

2. This opinion contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain document cited
- VII ☒ Certain defects in the international application
- VIII ☐ Certain observations on the international application

3. The applicant is hereby **invited to reply** to this opinion.

When? See the time limit indicated above. The applicant may, before the expiration of that time limit, request this Authority to grant an extension, see Rule 66.2(d).

How? By submitting a written reply, accompanied, where appropriate, by amendments, according to Rule 66.3. For the form and the language of the amendments, see Rules 66.8 and 66.9.

Also: For an additional opportunity to submit amendments, see Rule 66.4.
For the examiner's obligation to consider amendments and/or arguments, see Rule 66.4 bis.
For an informal communication with the examiner, see Rule 66.6.

If no reply is filed, the international preliminary examination report will be established on the basis of this opinion.

4. The final date by which the international preliminary examination report must be established according to Rule 69.2 is:

23.11.01 ✓

WV03.9 ✓

Name and mailing address of the international preliminary examining authority:



European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Authorized officer / Examiner

Veaux, C

Formalities officer (incl. extension of time limits)

Cornudet-Henschel, V
Telephone No. +49 89 2399 7371



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I. Basis of the opinion

1. With regard to the **elements** of the international application (Replacement *sheets which have been furnished to the receiving Office in response to an invitation under Article 14* are referred to in this opinion as "originally filed"):

Description, pages:

1-23 as originally filed

Claims, No.:

1-27 as originally filed

Drawings, sheets:

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:

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WRITTEN OPINION

International application No. PCT/EP99/06827

☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	25
Inventive step (IS)	Claims	25, 26
Industrial applicability (IA)	Claims	

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

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V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement

Document D1="Facilities for users..." cited in the international search report discloses, in accordance with the features of independent claim 25 (see the passages cited in the search report) a terminal for handling of call forwarding comprising means adapted for setting a call forwarding service device of a communication network to which said terminal subscribes; means adapted for receiving a notification about a forwarded call; and means adapted for displaying a content of said notification (see paragraph 6.1).

Claim 25 thus does not comply with the requirements of Article 33(2) PCT.

Furthermore, even if the applicant were to interpret claim 25 in such a manner as to enable him to allege that its subject-matter is novel, in view of possible differences with the subject-matter of D1, these differences would be too minor to justify an inventive step (Articles 33(3) PCT).

It should be noted that the same objection could be raised on the basis of documents D2="Intelligent telephones..." and D3=EP-A-588571, cited in the international search report.

The additional features defined in dependent claim 26 are too vague to justify an inventive step and claim 26 does not comply with the requirements of Article 33(3) PCT.

VII. Certain defects in the international application

To meet the requirements of Rule 5.1(a)(ii) PCT, Document D1 cited in the International Search Report should be identified in the description and the relevant background art disclosed therein should be briefly discussed.

In his letter of reply, the applicant should indicate the difference of the subject-matter of the new claim vis-à-vis the state of the art and the significance thereof. Additionally, the applicant is invited to comment on the other documents cited in the search report and to discuss the difference between the claimed subject-matter and the content of these documents.

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**WRITTEN OPINION
SEPARATE SHEET**

International application No. PCT/EP99/06827

To meet the requirements of Rule 6.3(b) PCT, the independent claims should be properly cast in the two part form, with those features which in combination are part of the prior art (document identified in the description) being placed in the preamble.

The purpose of the two-part form of claim according to Rule 6.3(b) PCT is to allow the reader to see clearly which features necessary for the definition of the claimed subject-matter are, in combination, part of the prior art. Care should be therefore taken that it is properly applied.

If the applicant is of the opinion that a two-part form of claim would be inappropriate he is invited to provide reasons in his reply. In addition, the applicant should ensure that it is clear from the description which feature of the subject-matter of the independent claims is known from the above cited document; see PCT Guidelines III,2.3a.

Reference signs in parentheses should be inserted in the claims to increase their intelligibility, Rule 6.2(b) PCT. This applies to both the preamble and characterising portion.

The attention of the applicant is drawn to the fact that the application may not be amended in such a way that it contains subject-matter which extends beyond the content of the application as filed, Article 34(2)(b) PCT.

In his letter of reply, the applicant should indicate the parts of the originally filed application serving as basis for subject-matter newly introduced into the claims.

The applicant is requested to file amendments by way of replacement pages in the manner stipulated by Rule 66.8(a) PCT. The applicant's attention is drawn to the fact that, as a consequence of Rule 66.8(a) PCT the examiner is not permitted to carry out any amendments under the PCT procedure, however minor these may be.

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INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference WO 24421	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/EP 99/06827	International filing date (day/month/year) 15/09/1999	(Earliest) Priority Date (day/month/year)
Applicant NOKIA NETWORKS OY		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

2. ☐ Certain claims were found unsearchable (See Box I).

3. ☐ Unity of invention is lacking (see Box II).

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the drawings to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☒ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

2

☐ None of the figures.

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 99/06827

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H04M3/54

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 H04M H04Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	BOLTJES C J: "FACILITIES FOR USERS OF SOPHO-SET FEATURE PHONES" PHILIPS TELECOMMUNICATION REVIEW, NL, PHILIPS TELECOMMUNICATIE INDUSTRIE N.V. HILVERSUM, vol. 48, no. 1, 1 March 1990 (1990-03-01), pages 20-27, XP000116333 page 4, right-hand column, paragraph 6.1 -page 5, left-hand column, paragraph 6.1	25
A	page 5, right-hand column, paragraph 6.2 -page 5, left-hand column, paragraph 6.2 figure 7 --- -/--	1-3, 20, 21, 25-27

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

24 February 2000

Date of mailing of the international search report

09/03/2000

Name and mailing address of the ISA

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Authorized officer

Patlaka, E.

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INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 99/06827

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	HUEBNER D L: "Intelligent telephones and generic switching: a distributed processing PABX architecture" ISS '84. XI INTERNATIONAL SWITCHING SYMPOSIUM, FLORENCE, ITALY, 7-11 MAY 1984, pages 23A1/1-6 vol.2, XP002131401 1984, Milano, Italy, Assoc. Elettrotecnica & Elettronica Italiana, Italy	25
A	page 3, left-hand column, paragraph 3 -right-hand column	1-3
X	EP 0 588 571 A (SONY CORP) 23 March 1994 (1994-03-23) column 1, line 1 -column 4, line 18	25
A	column 6, line 32 -column 9, line 27	1-3, 6, 7, 12-17, 19-24, 26, 27
A	US 5 657 382 A (TAMAGAWA NORIKO ET AL) 12 August 1997 (1997-08-12) column 4, line 27 -column 7, line 12	1-3, 20-22, 25-27
A	US 4 476 349 A (COTTRELL JENNIE L ET AL) 9 October 1984 (1984-10-09) cited in the application column 26, line 24 - line 60 claims 12-19	1-3, 20-22, 25-27
A	US 5 930 700 A (SOPER E SCOTT ET AL) 27 July 1999 (1999-07-27) column 3, line 18 - line 63 column 5, line 64 -column 6, line 54	1-6, 13, 16-23, 25-27

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 99/06827

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0588571	A	23-03-1994	DE 69325687 D DE 69325687 T JP 6209377 A US 5422942 A	26-08-1999 27-01-2000 26-07-1994 06-06-1995
US 5657382	A	12-08-1997	JP 5110693 A	30-04-1993
US 4476349	A	09-10-1984	CA 1191646 A EP 0104240 A IT 1194561 B KR 9200105 B WO 8303509 A	06-08-1985 04-04-1984 22-09-1988 09-01-1992 13-10-1983
US 5930700	A	27-07-1999	WO 9720423 A	05-06-1997

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